



## Vision Screening

A NASA DEVELOPED  
EYESIGHT SCREENING  
SYSTEM OFFERS  
INSTANT DETECTION  
OF DEFECTS

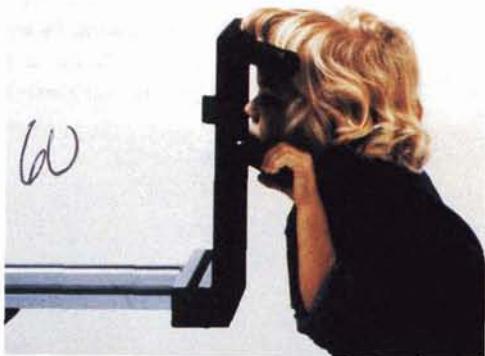
**A**t right is the VisiScreen® OSS-C (Ocular Screening System-Clinical), a device designed to detect eye problems in children through analysis of retinal reflexes. The system, which incorporates NASA image processing technology, was originally developed by Marshall Space Flight Center as an applications engineering project; it is now produced and marketed under an exclusive NASA license by Vision Research Corporation, Birmingham, Alabama.

The photorefractive OSS-C offers two major advantages in eye screening: it is very fast, literally as fast as taking a photo, and it requires no response from the subject, thus can be used to screen children as young as six months. OSS-C is capable of detecting a wide range of eye problems that should be treated by an eye care professional to correct or prevent progression of the defect. Vision Research's marketing is targeted toward 1) pediatricians and organizations concerned with children's eyesight and 2) corporation-sponsored mass screening services in schools and day care centers.

The OSS-C's photorefractor is basically a 35 millimeter camera with a telephoto lens and an electronic flash; the camera system is located in the black box. **At right** is the head positioning station six and a half feet from the camera. The flash sends light into the youngster's eyes and the light is reflected from the child's retinas back to the camera lens. The photorefractor analyzes the retinal reflexes generated by the subject's response to the flash and produces an image of the child's eyes in which the pupils are variously colored; the nature of a defect is identifiable by a trained observer's examination of the image. Example: the patterns in the pupils **below** can indicate—or lead to—amblyopia, or "lazy eye," the leading cause of preventable blindness in children.

Vision Research began marketing the OSS-C in mid-1991 and within a year pediatri-

59



cians in 16 states were using the system. Additionally, a number of civic and school organizations acquired the system, including several that concentrate on handicapped and special-ed children; these children are typically difficult to screen by any other method and they show a much higher percentage of eye problems than the normal population. In 1992, about 50,000 children were screened by the OSS-C and some 4,000 of them showed problems significant enough to warrant professional attention. •



\* VisiScreen is a registered trademark of Vision Research Corporation.